Claims

1. Device (1) for measuring the pressure of a medium (28), in particular a liquid medium, said device comprising a measuring chamber (10) through which the medium can flow and which has at least one elastically deformable wall (12), at least one wall (14) that is more rigid by comparison to said first wall, and an inlet (20) and outlet (22) for the medium, characterized in that at least one excitation electrode (30) is provided in or on the at least one more rigid wall (14) of the measuring chamber (10), and at least one signal electrode (32) is provided on the elastically deformable wall (12), for impedance measurement.

2. Device (1) according to Claim 1, characterized in that an excitation system is provided for supplying the at least one excitation electrode (30).

3. Device (1) according to Claim 2, characterized in that the excitation system delivers a high-frequency alternating current of low current intensity, and, in particular, the alternating current is adjustable.

4. Device (1) according to one of the preceding claims, characterized in that the at least one excitation electrode (30) is made of a material providing good conduction of high-frequency alternating currents, and, in particular, is hard silver-plated.

5. Device (1) according to one of the preceding claims, characterized in that the elastic wall (12) is made of a reversibly deformable material, in particular an elastomer.

6. Device (1) according to one of the preceding claims, characterized in that the at least one signal electrode (32) is designed substantially flat, being applied in particular as a film material, conductive coating, conductive imprint and/or lacquer, in particular onto the elastic wall (12) of the measuring chamber (10) by a vacuum deposition method or being sprayed on, adhesively bonded on or otherwise applied.

7. Device (1) according to one of the preceding claims, characterized in that the at least one elastic wall (12) is or can be connected to the other walls of the measuring chamber (10) by a tongue-and-groove joint, the elastic wall having in particular an annular bead element (18) on its edge (15) facing toward the other walls, and the walls which are or can be connected to the elastic wall having at least one groove (19) for insertion of the bead element (18).

8. Device (1) according to one of the preceding claims, characterized in that an arrangement is provided for ensuring free mobility of the elastic wall.

9. Device (1) according to Claim 8, characterized in that the arrangement is a protective cap (60), or a recess (42) which permits free mobility of the elastic wall (12) and which is situated in a retaining means (40) for securing the device in the area of the measuring chamber (10).

10. Device (10) according to Claim 9, characterized in that the protective cap (60) and/or the recess (42) in the retaining means (40) has such a shape and such dimensions, and is arranged in the area of the elastic wall (12) such that it forms an

abutment surface for the latter for pressure limitation.

11. Device (1) according to one of the preceding claims, characterized in that an arrangement is provided for adjusting the device and for holding it at an adjustable height, this arrangement in particular being provided on the retaining means (40).

12. Device (1) according to one of the preceding claims, characterized in that the measuring chamber (10) has in at least some areas a means for coupling out capacitive fields and/or is surrounded by a means acting as a Faraday cage, and in particular the measuring chamber and/or the retaining means is/are provided with a metallic coating (46).

13. Device (1) according to the preamble of Claim 1 or according to one of the preceding claims, characterized in that, in order to determine the conductivity of the medium (28) located in the measuring chamber, an excitation electrode (30) and a second electrode (34) are provided outside the elastic wall (12).

14. Device (1) according to one of the preceding claims, characterized in that an evaluation unit is provided for determining the hematocrit value from the determined conductivity value and/or the internal pressure of the measuring chamber (10) and in particular for correction of zero line and sensitivity.

15. Device (1) according to one of the preceding claims, characterized in that at least one contact pin (50, 52, 54) is provided for attaching the measuring chamber (10) onto the retaining means

(40).

16. Device (1) according to Claim 15, characterized in that the retaining means (40) has a retaining plate which is provided with contact surfaces or contact pads and which is used to generate concealed contacting between retaining means (40) and measuring chamber (10).

17. Device (1) according to Claim 16, characterized in that the contact surfaces and/or contact pads and the contact pins (50, 52, 54) are distributed in such a way that false contacting and false polarity are substantially avoided.

18. Device (1) according to one of Claims 15 to 17, characterized in that at least some of the contact pins and electrodes are formed integrally.

19. Device (1) according to Claim 18, characterized in that the contact pins and electrodes are molded onto the measuring chamber, in particular in an insert injection-molding operation.

20. Device (1) according to one of Claims 15 to 19, characterized in that the protective cap (60) has a base part (62) for protecting the elastic wall (12) of the measuring chamber (10), and a collar part (64) which at least partially surrounds the area of the electrodes (30, 32, 34) and/or contact pins (50, 52, 54) so as to protect the contact pins.

21. Method for determining the hematocrit value of blood contained in a measuring chamber (10), in particular using a device (1) as claimed in one of the preceding claims, in which method blood flows through the measuring chamber (10) in an extracorporeal circuit, and the hematocrit value

is determined by determining the conductivity value between two fixed electrodes (30, 34) projecting into the measuring chamber.

22. Method according to Claim 21, characterized in that, in order to draw up a liquid balance, the hematocrit value is determined by conductivity value calculation at the start of a measurement path and at the end of the measurement path and is compared.